

# **IMPROVED BURGLAR ALARM LIGHT**

## **FIELD OF THE INVENTION**

The present invention relates to improve the traditional burglar alarm light for an inventive mechanical design of an adjustable lamp set  
5 displacement inside the lamp shell. It is easy and cost effective for the user to alter the light projection type for either converging or scattering result on one single lighting fixture.

## **BACKGROUND OF THE INVENTION**

Projection light is a common security apparatus used in residences and  
10 high rise buildings. It is usually installed on the entrance and exit of people or vehicles. The projection light normally is turned off. When vehicles, people or moving objects approach the entrance or exit, the sensor in the projection light will actuate the circuits in the projection light to turn on the projection light. It can scare off intruders and provide illumination function.  
15 It is widely used in the security facilities.

However, conventional projection light generally is installed on a high location to secure the most desirable projection angle and scope. To install the projection light, users have to climb a ladder to a higher location to fasten the projection light, then descend to the floor to check whether the  
20 projecting scope is proper. If the projection scope and angle are not desirable, users have to climb up again to make adjustment or change the installation location and projection angle. The installation task is cumbersome. Moreover, when users want to change the installation of the projection light, as the conventional projection light has a fixed projection

focus, the installation location or projection scope cannot be changed at will. A new set of projection light has to be purchased. It is inconvenient to install or replace, and not economical.

### **SUMMARY OF THE INVENTION**

5       Therefore the primary object of the invention is to resolve the aforesaid disadvantages and to avoid the drawbacks of the prior art. The invention has an adjustment mechanism in the projection light to adjust the displacement of the lamp set thereby to alter light projection type (converging or scattering) emitted from a light source.

10       In order to achieve the foregoing object, the burglar alarm light of the invention includes a shell, a lamp set housed in the shell and a shade coupled on the front end of the shell. An adjustment mechanism is installed in the shell to adjust the location of the lamp set thereby to change light projection type (converging or scattering) emitted from a light source..

15       The foregoing, as well as additional objects, features and advantages of the invention will be more readily apparent from the following detailed description, which proceeds with reference to the accompanying drawings.

### **BRIEF DESCRIPTION OF THE DRAWINGS**

FIG. 1 is an exploded view of the invention.

20       FIG. 2 is a perspective view of the invention.

FIG. 3A is a cross section taken on line 3A-3A in FIG. 2.

FIG. 3B is a sectional view of an operating condition according to FIG. 3A.

FIG. 4 is a schematic view of another embodiment of the invention adopted for the head light of a car.

**DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS**

5 Referring to FIGS. 1, 2, 3A and 3B, the burglar alarm light of the invention includes a shell 1, a lamp set 3 located in the shell 1, and a shade 4 coupled on the front end of the shell 1. The shell 1 further has an adjustment mechanism 2 located therein to adjust the displacement of the lamp set 3 thereby to alter light projection type (converging or scattering).

10 The shell 1 is to house the adjustment mechanism 2 and the lamp set 3. The shade 4 is coupled on the front end of the shell 1.

The adjustment mechanism 2 includes a seat 21. The seat 21 has a bottom section 211 which has an aperture 2111 formed thereon. The bottom section 211 has two opposing ends extending upwards to form respectively  
15 a first extended section 212. The first extended section 212 has an operation slot 213, and a first lug 2121 on the periphery and a second lug 2122 extending inwards. The seat 21 further is coupled with a rotary member 22 (being a screw in the drawings). The rotary member 22 has screw threads 221 and a hole 222. In addition, the rotary member 22 runs through the  
20 aperture 2111 on the bottom section 211 and is coupled with a first retaining member 23 (being a C-shaped clip ring in the drawings) to confine on the bottom section 211 of the seat 21. The hole 222 is coupled with a second retaining member 27 (being a pin in the drawings). The rotary member 22 has one end coupling with a moving member 24. The  
25 moving member 24 has a bottom 241 which has a hole 2411 to receive the

rotary member 22. The bottom 241 of the moving member 24 has two opposing ends extended upwards to form respectively a first arm 242. Each first arm 242 has a guiding member 2421 movable in the operation slot 213 of the seat 21. In addition, the first arm 242 has one end extended inwards to form a second arm 243. The second arm 243 has an anchor hole 2431. The rotary member 22 has other end to couple with an anchor member 25. The anchor member 25 is wedged coupled with an adjusting member 26 which engages with the rotary member 22 in the shell 1. The adjusting member 26 is turnable by users by a force, such as turned by user's fingers or having a hole on one end to engage with a hand tool or a coin for turning.

The lamp set 3 includes a socket 31, a spacer 32 and a lamp bulb 33 mounted onto the socket 31. The socket 31 is fastened to the anchor hole 2431 of the moving member 24 through a fastener (such as screw). The spacer 32 is an annular ring to allow the socket 31 and the lamp bulb 33 to pass through. The spacer 32 has two holes 321 to couple with the first lug 2121 of the seat 21. The spacer 32 has heat insulation effect, and may guide the lamp bulb 33 when the lamp set 3 is moved.

The shade 4 has a reflective mirror 41 to converge light emitted from the lamp bulb 33 and project the reflected light to a desired location.

When in use, users turn the adjusting member 26. As the adjusting member 26 is connected to the rotary member 22, the rotary member 22 is driven and rotates. And the screw threads 221 of the rotary member 22 push the moving member 24 forwards or rearwards horizontally. As the moving member 24 is fastened to the socket 31 which in turn is coupled with the lamp bulb 33, thus turning of the rotary member 22 will move the

socket 31, lamp bulb 33 and moving member 24 horizontally to achieve the object of adjusting the focal distance of light.

Referring to FIGS. 3A and 3B, when users want to adjust the focal length closer, the rotary member 22 may be turned in one direction and moved rearwards, and move the lamp bulb 33 closer to the reflective mirror 41 of the shade 4 to achieve light converging effect. When the moving member 24 is moved closer to the bottom section 211 of the seat 21, the first retaining member 23 is bucking against the moving member 24 to prohibit the moving member 24 from moving continuously.

On the other hand, when users want to adjust the focal distance of the light farther away, the rotary member 22 may be turned in reverse direction to move the lamp bulb 33 away from the reflective mirror 41 of the shade 4 at a longer distance to achieve light scattering effect. When the moving member 24 is moved away horizontally from the rotary member 22, the second retaining member 27 is bucking against the bottom 241 of the moving member 24 to prohibit the moving member 24 from escaping the rotary member 22.

Moreover, aside from manually adjusting the focal distance of the light, adjustment of the focal distance of the light may also be accomplished electrically so that the invention may be coupled with projection lights that have various actuators. Refer to FIG. 4 for another embodiment of the invention adopted for use on a car light. As shown in the drawing, the invention is coupled with an actuator 5 on the head light of a car. The main difference from FIG. 3A is that the rotary member 22 is replaced by a worm 22' which has one end connecting to the actuator 5. The actuator 5

may be a motor, server motor, or the like. The actuator 5 may drive the worm 22' to rotate, thereby drivers can adjust the projection focal distance of the head light as desired.